

AMENDMENTS TO THE CLAIMS

1. (Cancelled)
2. (Currently Amended) A biochip cartridge according to claim 6, 24 or 264 wherein said capture binding ligands ~~are capture probes~~ comprise nucleic acids.
3. (Currently Amended) A biochip cartridge according to claim 6, 24 or 264 wherein said reaction chamber further comprises a gasket to retain fluid in contact with said array.
4. (Cancelled)
5. (Currently Amended) A biochip cartridge according to claim 6, 24, or 264 wherein said reaction chamber further comprises an outlet port.
6. (Currently Amended) A biochip cartridge ~~according to claim 1 comprising:~~
_____ a) a reaction chamber ~~wherein said reaction chamber is configured to minimize the~~
introduction or retention of air bubbles upon introduction of a sample; said chamber comprising:
_____ i) a substrate comprising an array of electrodes, each comprising:
_____ A) a self-assembled monolayer; and
_____ B) a capture binding ligand;
_____ ii) an inlet port for the introduction of reagents; and
_____ b) interconnects to allow the electrical connection of said electrodes to a processor.-
7. (Currently Amended) A biochip cartridge according to claim 6, 24, or 264 wherein said array is on one surface of said substrate.
8. (Currently Amended) A biochip cartridge according to claim 6, 24, or 264 wherein two surfaces of said substrate each comprise an array.
9. (Currently Amended) A biochip cartridge according to claim 6, 24, or 264 further comprising a cap comprising at least one storage well comprising assay reagents.

Claims 10-23. Cancelled.

24. (New) A biochip cartridge comprising:
a) a reaction chamber comprising:
i) a substrate comprising a printed circuit board comprising an array of electrodes, each

electrode comprising:

- A) a self-assembled monolayer; and
- B) a capture binding ligand;
- ii) an inlet port for the introduction of reagents; and
- b) interconnects to allow the electrical connection of said electrodes to a processor.

25. (New) A biochip cartridge according to claim 6 or 24, wherein said inlet port comprises a valve comprising a semipermeable membrane.

26. (New) A biochip cartridge comprising:

- a) a reaction chamber comprising:
 - i) a substrate comprising an array of electrodes, each electrode comprising:
 - A) a self-assembled monolayer; and
 - B) a capture binding ligand;
 - ii) an inlet port for the introduction of reagents, said inlet port comprising a valve including a semipermeable membrane; and
- b) interconnects to allow the electrical connection of said electrodes to a processor.

27. (New) A biochip cartridge according to claim 26, wherein said semipermeable membrane preferentially allows the escape of gas and retains sample fluid.

28. (New) A biochip cartridge according to claim 26, wherein said semipermeable membrane comprises porous teflon.

29. (New) A biochip cartridge according to claim 26, wherein said semipermeable membrane comprises Gortex™.

30. (New) A biochip cartridge according to claim 6 or 26 wherein said substrate comprises a printed circuit board.

31. (New) A biochip cartridge according to claim 6, 24, or 26, wherein said capture binding ligands comprise proteins.